

序列表

<110> 孙镭

<120> 微生物发酵生产N-乙酰-D-氨基葡萄糖和/或D-氨基葡萄糖盐的方法

<150> CN201610208203.9

<160> 65

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<211> 70

<212> DNA

<213> 人工序列

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<211> 80

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<213> 人工序列

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<212> DNA

<213> 人工序列

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120

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240

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420

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<210> 4

<211> 2699

<212> DNA

<213> 大肠杆菌(Escherichia coli)

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 180
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1920

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<210> 5
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 <212> DNA
 <213> 人工序列
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 ggccagtg
 68

<210> 6
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 <212> DNA
 <213> 人工序列
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 atgaccatg
 69

<210> 7
 <211> 1030
 <212> DNA

<213> 大肠杆菌(Escherichia coli)

<400> 7

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gttctggcag atatTTTTtca tctaccggtc caaacggttt gcggcacagc ggcacagaaa
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1020
cctgttatac
1030
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<210> 8

<211> 68

<212> DNA

<213> 人工序列

<400> 8

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ggccagtg
68
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<210> 9

<211> 76
<212> DNA
<213> 人工序列
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aacagctatg accatg
76

<210> 10
<211> 1200
<212> DNA
<213> 大肠杆菌(*Escherichia coli*)
<400> 10
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1080

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<210> 11
<211> 68
<212> DNA
<213> 人工序列
<400> 11

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<210> 12
<211> 69
<212> DNA
<213> 人工序列
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atgaccatg
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<210> 13
<211> 2350
<212> DNA
<213> 大肠杆菌(Escherichia coli)<400> 13

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2220
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<210> 14
<211> 68
<212> DNA
<213> 人工序列
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ggccagtg
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<210> 15
<211> 68
<212> DNA
<213> 人工序列
<400> 15

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tgaccatg
68

<210> 16
<211> 876
<212> DNA
<213> 大肠杆菌(Escherichia coli)
<400> 16

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gacgggcaga tccgcgatcg tcgtgaactt cctacgccag ccagccagac accagaagcc
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ggggctgcgc tgttggccca gggagaaaaa ttatga
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<210> 17
<211> 291
<212> 氨基酸
<213> 大肠杆菌(*Escherichia coli*)
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120
ITDMVFITVSTGVGGGVSGCKLLTGPGLAGHIGHTLADPHGPVCGCGRTGCVEIASG
180
RGIAAAAQGELAGADAKTIFTRAGQGDEQAQQLIHRSARTLARLIADIKATTDQCQVWVG
240
GSVGLAEGYLALVETYLAEPAAFHVDLLAAHYRHDAGLLGAALLAQGEKL
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<210> 18
<211> 30
<212> DNA
<213> 人工序列
<400> 18
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<210> 19
<211> 30
<212> DNA
<213> 人工序列
<400> 19
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<210> 20
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<212> DNA
<213> 人工序列
<400> 20
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<210> 21
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<212> DNA
<213> 人工序列
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<210> 22
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<210> 23
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<212> DNA
<213> 人工序列
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<210> 24
<211> 72
<212> DNA
<213> 人工序列
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tcaaggcgca ct
72

<210> 25
<211> 68
<212> DNA
<213> 人工序列
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68

<210> 26
 <211> 876
 <212> DNA
 <213> 大肠杆菌(*Escherichia coli*)
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 tgcaaactgc ttaccggccc tggcgggtctg gcggggcata tcgggcatac gcttgccgat
 480
 ccacacggcc cagtctgcgg ctgtggacgc acaggttgcg tggaagcgat tgcttctggt
 540
 cgcggcattg cagcggcagc gcagggggag ttggctggcg cggatgcgaa aactattttc
 600
 acgcgcgccg ggcagggtga cgagcaggcg cagcagctga ttcaccgctc cgcacgtacg
 660
 cttgcaagcc tgatcgctga tattaaagcc acaactgatt gccagtgcgt ggtggctcgt
 720
 ggcagcgttg gtctggcaga agggatatctg gcgctggtgg aaacgtatct ggcgcaggag
 780
 ccggcggcat ttcattgtga ttactggcg gcgcattacc gccatgatgc aggtttactt
 840
 ggggctgcgc tgttggccca gggagaaaaa ttatga
 876

<210> 27
 <211> 291
 <212> 氨基酸
 <213> 大肠杆菌(*Escherichia coli*)
 <400> 27
 MTLAIDIGGKLAALIGADGQIRDRRELPTPASRTPEALRDALSALVSPLQAHAQRVA
 60
 IASTGIIRDGSLALNPHNLGGLLHFPLVKLTLEQLTNLPTIAMNDAQAAAWAEFQALDGD
 120
 ITDMVFITVSTGVGGGVVSGCKLLTGPGGLAGHIGHTLADPHGPVCGGRTGCVEIASG
 180
 RGIAAAAQGELAGADAKTIFTRAGQGDEQAQQLIHRSAITLASLIADIKATTDQCQVWVG
 240
 GSVGLAEGYLALVETYLAQEPAAFHVDLLAAHYRHDAGLLGAALLAQGEKL

<210> 28
<211> 690
<212> DNA
<213> 大肠杆菌(*Escherichia coli*)
<400> 28
atgtcgttac ttgcacaact ggatcaaaaa atcgctgcta acggtggcct gattgtctcc
60
tgccagccgg ttccggacag cccgctcgat aaacccgaaa tcgtcgccgc catggcatta
120
gcggcagaac aggcgggcgc ggttgccatt cgcattgaag gtgtggcaaa tctgcaagcc
180
acgcgtgcgg tggtagcgt gccgattatt ggaattgtga aacgcgatct ggaggattct
240
ccggtacgca tcacggccta tattgaagat gttgatgcgc tggcgcaggc gggcgcggac
300
attatcgcca ttgacggcac cgaccgcccg cgtccgggtgc ctgttgaaac gctgctggca
360
cgtattcacc atcacggttt actggcgatg accgactgct caacgccgga agacggcctg
420
gcatgccaaa agctgggagc cgaaattatt ggcactacgc tttctggcta taccacgcct
480
gaaacgccag aagagccgga tctggcgctg gtgaaaacgt tgagcgacgc cggatgtcgg
540
gtgattgccg aagggcggtta caacacgcct gctcaggcgg cggatgcgat gcgccacggc
600
gcgtgggcgg tgacggtcgg ttctgcaatc acgcgtcttg agcacatttg tcagtggtag
660
aacacagcga tgaaaaaggc ggtgctatga
690

<210> 29
<211> 229
<212> 氨基酸
<213> 大肠杆菌(*Escherichia coli*)
<400> 29
MSLLAQLDQKIAANGGLIVSCQVPDPLDKPEIVAAMALAAEQAGAVAIRIEGVANLQA
60
TRAVSVPIIGIVKRDLEDSPVRITAYIEDVDALAQAAGADIIAIDGTDRPRPVPVETLLA
120
RIHHHGLLAMTDCSTPEDGLACQKLGAEIIGTTLSGYTTPETPEEPDLALVKTLSDAGCR
180
VIAEGRYNTPAQAADAMRHGAWAVTVGSAITRLEHICQWYNTAMKKAVL
229

<210> 30
<211> 29
<212> DNA

<213> 人工序列

<400> 30

catgccatgg cttcgttact tgcacaact
29

<210> 31

<211> 34

<212> DNA

<213> 人工序列

<400> 31

cccaagctta tcatagcacc gcctttttca tcgc
34

<210> 32

<211> 166

<212> DNA

<213> 人工序列

<400> 32

ttcgtgtcgc tcaaggcgca ctcccgttct ggataatggt ttttgcgccg acatcataac
60
ggttctggca aatattctga aatgagctgt tgacaattaa tcatccggct cgtataatgt
120
gtggaattgt gagcggataa caatttcaca caggaaacag accatg
166

<210> 33

<211> 41

<212> DNA

<213> 人工序列

<400> 33

catggtcata gctgtttcct tcgtgtcgct caaggcgcac t
41

<210> 34

<211> 19

<212> DNA

<213> 人工序列

<400> 34

catggtctgt ttcctgtgt
19

<210> 35

<211> 41

<212> DNA

<213> 人工序列

<400> 35

agtgcgcctt gagcgacacg aaggaaacag ctatgaccat g
41

<210> 36

<211> 18
<212> DNA
<213> 人工序列
<400> 36

gtaaaacgac ggccagtg
18

<210> 37
<211> 47
<212> DNA
<213> 大肠杆菌(Escherichia coli)
<400> 37

acatcttccc ttagcgaaag gcccgggtaca tagaccgggc aacagga
47

<210> 38
<211> 68
<212> DNA
<213> 人工序列
<400> 38

ccgtgccgtt tggcagcgcc aaaaacgatt tagtcaaac caaaagttaa gtaaaacgac
60
ggccagtg
68

<210> 39
<211> 69
<212> DNA
<213> 人工序列
<400> 39

atcaggccac cgtagcagc gattttttga tccagttgtg caagtaacga catggtctgt
60
ttcctgtgt
69

<210> 40
<211> 69
<212> DNA
<213> 人工序列
<400> 40

cttattcccc ctacgagaac cctattttggc tcgtttcaag ccgtattttt agtaaaacga
60
cggccagtg
69

<210> 41
<211> 67
<212> DNA
<213> 人工序列
<400> 41

agcagcccat ttgccgacct gttcagcggg agtcaggggg atcagttctca tggctctgttt
60
cctgtgt
67

<210> 42
<211> 190
<212> DNA
<213> 大肠杆菌(Escherichia coli)
<400> 42
tgaggagata acataatctc cctcccacaa gcagtaacta taaaaataac cccactctct
60
acaaggctcg gggcgcccgga aaaaacgggc atacaggttg accgacaacg atataaatcg
120
gaatcaaaaa ctatgtgtgg aattgttggc gcgatcgcgc aacgtgatgt agcagaaatc
180
cttcttgaag
190

<210> 43
<211> 71
<212> DNA
<213> 人工序列
<400> 43
tgaggagata acataatctc cctcccacaa gcagtaacta taaaaataac cccgtaaaac
60
gacggccagt g
71

<210> 44
<211> 75
<212> DNA
<213> 人工序列
<400> 44
cttcaagaag gatttctgct acatcacgtt gcgcgatcgc gccacaatt ccacacggaa
60
acagctatga ccatg
75

<210> 45
<211> 68
<212> DNA
<213> 人工序列
<400> 45
tgaggagata acataatctc cctcccacaa gcagtaacta taaaaataac gtaaaacgac
60
ggccagtg
68

<210> 46

<211> 74
<212> DNA
<213> 人工序列
<400> 46
cttcaagaag gatttctgct acatcacggt gcgcgatcgc gccacaatt ccacacatgg
60
tctgtttcct gtgt
74

<210> 47
<211> 69
<212> DNA
<213> 人工序列
<400> 47
cttattcccc ctacgagaac cctatttggc tcgtttcaag ccgtatTTTT agtaaaacga
60
cggccagtg
69

<210> 48
<211> 70
<212> DNA
<213> 人工序列
<400> 48
agcagcccat ttgccgacct gttcagcggg agtcaggggg atcagtctca tggaaacagc
60
tatgaccatg
70

<210> 49
<211> 1131
<212> DNA
<213> 大肠杆菌(Escherichia coli)
<400> 49
gtgaaagtac tgactgtatt tggtagcgc cccgaagcca tcaagatggc gccgttggtg
60
catgcgttgg caaaagatcc tttttttgag gctaaagttt gcgtcactgc gcagcatcgg
120
gagatgctcg atcaggtgct gaaactcttt tccattgtac ctgactacga tctcaacata
180
atgcagccag gacagggcct gacagagata acctgtcggg ttctggaagg gctaaaacct
240
attcttgccg agttcaaacc agacgtcgtg ctggttcacg gcgatacgac gacgacgctg
300
gcaaccagcc tggcggcggt ttatcagcgt attcctgttg gtcacgttga ggctggtctg
360
cgcacggggc atctctattc gccgtggccg gaagaggcta accgtacatt gaccgggcat
420
ctggcgtatgt atcatttctc tccaaccgaa acttcccggc aaaacttgct gcgtgaaaac
480

gttgcggata gccgaatctt cattaccggt aatacagtca ttgatgcact gttatgggtg
 540
 cgtgaccagg tgatgagcag cgacaagctg cgttcagaac tggcggcaaa ttaccggtt
 600
 atcgacccccg ataaaaagat gattctgggtg accgggtcaca ggcgtgagag tttcggtcgt
 660
 ggctttgaag aaatctgcca cgcgctggca gacatcgcca ccacgcacca ggacatccag
 720
 attgtctatc cgggtgcatct caacccgaac gtcagagaac cgggtcaatcg cattctgggg
 780
 catgtgaaaa atgtcattct gatcgatccc caggagtatt taccgtttgt ctggctgatg
 840
 aaccacgcct ggctgatttt gaccgactca ggcggcattc aggaagaagc gccttcgctg
 900
 gggaaacctg tgctgggtgat gcgcgatacc actgagcgtc cggaagcggg gacggcgggt
 960
 acgggtgcgtc tggtaggcac ggataagcag cgaattgtcg aggaagtgc gcgtctttta
 1020
 aaagacgaaa acgaatatca agctatgagc cgcgcccata acccgatatg tgatggtcag
 1080
 gcatgctctc gcattctgga agcgtaaana aataatcgga tatcactatg a
 1131

<210> 50
 <211> 376
 <212> 氨基酸
 <213> 大肠杆菌(*Escherichia coli*)
 <400> 50
 MKVLTVFGRPEAIKMAPLVHALAKDPFFEAKVCVTAQHREMLDQVLKLFSIVPDYDLNI
 60
 MQPGQGLTEITCRILEGLKPILAEFKPDVVLVHGDTTTTLATSAAFYQRIPVGHVEAGL
 120
 RTGDLYSPWPEEANRTL TGH LAMYHFSPTETSRQNLLRENVADSRIFITGNTVIDALLWV
 180
 RDQVMSSDKLRSELAANYPFIDPDKKMILVTGHRRESFGRGFEEICHALADIATTHQDIQ
 240
 IVYPVHLNPNVREPVNRI LGHVKNVILIDPQEYLPFVWLMNHAWLIL TDSGGIQEEAPSL
 300
 GKPVLV MRD TTERPEAVTAGTVRLVGTDKQRIVEEVTRLLKDENEYQAMSRAHNPYGDGQ
 360
 ACSRILEALKNNRISL
 376

<210> 51
 <211> 30
 <212> DNA
 <213> 人工序列
 <400> 51
 catgccatgg tgaaagtact gactgtat
 30

<210> 52
<211> 31
<212> DNA
<213> 人工序列
<400> 52
cccaagctta ttatagtgat atccgattat t
31

<210> 53
<211> 110
<212> DNA
<213> 大肠杆菌(*Escherichia coli*)
<400> 53
tgtcgggggg ctgatcgggg ctggtgtcgc attaaccgc cgttgctcga aatagcaaca
60
ctgctgcggt gagcgaaaag gcgctcgccg cttattcgaa gagaatcgat
110

<210> 54
<211> 73
<212> DNA
<213> 人工序列
<400> 54
tgtcgggggg ctgatcgggg ctggtgtcgc attaaccgc cgttgctcga aataggtaaa
60
acgacggcca gtg
73

<210> 55
<211> 69
<212> DNA
<213> 人工序列
<400> 55
atcgattctc ttcgaataag cggcgagcgc ctttgcgctc accgcagcag catggtctgt
60
ttcctgtgt
69

<210> 56
<211> 690
<212> DNA
<213> 大肠杆菌(*Escherichia coli*)
<400> 56
atgtcggttac ttgcacaact ggatcaaaaa atcgctgcta acggtggcct gattgtctcc
60
tgccagccgg ttccggacag cccgctcgat aaaccgaaa tcgtcgccgc catggcatta
120
gcggcagaac aggcgggcgc ggttgccatt cgcattgaag gtgtggcaaa tctgcaagcc
180

acgcgtgcgg tggtagtgt gccgattatt ggaattgtga aacgcgatct ggaggattct
 240
 ccggtacgca tcacggccta tattgaagat gttgatgcgc tggcgcaggc gggcgcggac
 300
 attatcgcca ttgacggcac cgaccgcccg cgtccgggtgc ctgttgaaac gctgctggca
 360
 cgtattcacc atcacggttt actggcgatg accgaccgct caacgccgga agacggcctg
 420
 gcatgccaaa agctgggagc cgaaattatt ggcactacgc tttctggcta taccacgcct
 480
 gaaacgccag aagagccgga tctggcgctg gtgaaaacgt tgagcgacgc cggatgtcgg
 540
 gtgattgccg aagggcgtca caacacgcct gctcaggcgg cggatgcgat gcgccacggc
 600
 gcgtgggcgg tgacggtcgg ttctgcaatc acgcgtcttg agcacatttg tcagtggtag
 660
 aacacagcga tgaaaaaggc ggtgctatga
 690

<210> 57
 <211> 229
 <212> 氨基酸
 <213> 大肠杆菌(*Escherichia coli*)
 <400> 57
 MSLLAQLDQKIAANGGLIVSCQVPDPLDKPEIVAAMALAAEQAGAVAIRIEGVANLQA
 60
 TRAVSVPIIGIVKRDLEDSPVRITAYIEDVDALAQAQADIIAIDGTDPRPVPVETLLA
 120
 RIHHHGLLAMTDRSTPEDGLACQKLGAEIIGTTLSGYTTPETPEEPDLALVKTLSDAGCR
 180
 VIAEGRHNTPAQAADAMRHGAWAVTVGSAITRLEHICQWYNTAMKKAVL
 229

<210> 58
 <211> 1131
 <212> DNA
 <213> 大肠杆菌(*Escherichia coli*)
 <400> 58
 gtgaaagtac tgactgtatt tggtagcgc ccggaagcca tcaagatggc gccgttggtg
 60
 catgcgttgg caaaagatcc tttttttgag gctaaagttt ccgtcactgc gcagcatcgg
 120
 gagatgctcg atcaggtgct gaaactcttt tccattgtac ctgactacga tctcaacata
 180
 atgcagccag gacagggcct gacagagata acctgtcggg ttctggaagg gctaaaacct
 240
 attcttgccg agttcaaacc agacgtcgtg ctggttcacg gcgatacgac gacgacgctg
 300
 gcaaccagcc tggcggcggt ttatcagcgt attcctgttg gtcacgttga ggctggtctg
 360

cgcacgggcg atctctattc gccgtggccg gaagaggcta accgtacatt gaccgggcat
 420
 ctggcgatgt atgacttctc tccaaccgaa acttcccggc aaaacttgct gcgtgaaaac
 480
 gttgcggata gccgaatctt cattaccggt aatacagtca ttgatgcact gttatgggtg
 540
 cgtgaccagg tgatgagcag cgacaagctg cgttcagaac tggcggcaaa ttaccctgtt
 600
 atcgaccccc ataaaaagat gattctggtg accggtcaca ggcgtgagag tttcggtcgt
 660
 ggctttgaag aaatcttcca cgcgctggca gacatcgcca ccacgcacca ggacatccag
 720
 attgtctatc cggggcatct caaccgaaac gtcagagaac cggtaaatcg cattctgggg
 780
 catgtgaaaa atgtcattct gatcgatccc caggagtatt taccgtttgt ctggctgatg
 840
 aaccacgcct ggctgatttt gaccgactca ggcggcattc aggaagaagc gccttcgctg
 900
 gggaaacctg tgctggtgat gcgcgatacc actgagcgtc cggaagcggg gacggcgggt
 960
 acggtgcgtc tggtaggcac ggataagcag cgaattgtcg aggaagtgc gcgtctttta
 1020
 aaagacgaaa acgaatacca agctatgagc cgcgcccata acccgatatg tgatggtcag
 1080
 gcatgctctc gcattctgga agcgtaaaaa aataatcgga tatcactatg a
 1131

<210> 59

<211> 376

<212> 氨基酸

<213> 大肠杆菌(Escherichia coli)

<400> 59

MKVLTVFGRPEAIKMAPLVHALAKDPFFEAKVSVTAQHREMLDQVLKLF SIVPDYDLNI
 60

MQPGQGLTEITCRILEGLKPILAEFKPDVVLVHGDTTTTLATS LAAFYQRIPVGHVEAGL
 120

RTGDLYSPWPPEANRTL TGH LAMYDFSPTETSRQNLLRENVADSRIFITGNTVIDALLWV
 180

RDQVMSSDKLRSELAANY PFIDPKKMILVTGHRRESFGRGFEEIFHALADIATTHQDIQ
 240

IVYPGHLNPNVREPVNRILGHVKNVILIDPQEYLPFVWLMNHAWLIL TDSGGIQEEAPSL
 300

GKPVLVMRD TTERPEAVTAGTVRLVGTDKQRIVEEVTRLLKDENEYQAMSRAHNPYGDGQ
 360

ACSRILEALKNNRISL
 376

<210> 60

<211> 441

<212> DNA

<213> 大肠杆菌(Escherichia coli)
<400> 60
atgctcgacc agcagaccat caacatcatc aaggcgaccg tccccgtcct caaggagcac
60
ggcgtcacca tcaccaccac cttctacaag aacctgttcg ccaagcaccg ggaggtccgc
120
cccctgttcg acatgggccg gcaggagtcc ctcgagcagc cgaaggccct ggcgatgacc
180
gtgctcgccg cggcccagaa catcgagaac ctgccggcca tcctccccgc ggtcaagaag
240
atcgccgtga agcactgcca ggccggcgct gcggccgcgc actaccccat cgtgggccag
300
gagctgctcg gcgccatcaa ggaggtcctg ggcgacgccg cgaccgacga catcctcgac
360
gcctggggca aggcgtacgg cgtgatcgcg gacgtgttca tccaggtgga ggcggacctc
420
tacgcgcagg cgggtggagta a
441

<210> 61
<211> 146
<212> 氨基酸
<213> 大肠杆菌(Escherichia coli)
<400> 61
MLDQQTINI IKATVPVLKEHGV TITTTFYKNLFAKHPEVRPLFDMGRQESLEQPKALAMT
60
VLAAAQNIENLPAILPAVKKIAVKHCQAGVAAAHYPIVGQELLGAIKEVLGDAATDDILD
120
AWGKAYGVIADVFIQVEADLYAQAVE
146

<210> 62
<211> 29
<212> DNA
<213> 人工序列
<400> 62
catgccatgg acctcgacca gcagaccat
29

<210> 63
<211> 31
<212> DNA
<213> 人工序列
<400> 63
cccaagctta ttactccacc gcctgcgcgta g
31

<210> 64
<211> 441

<212> DNA
<213> 大肠杆菌(Escherichia coli)
<400> 64
atgctcgacc agcagaccat caacatcatc aaggcgaccg tccccgtcct caaggagcac
60
ggcgtcacca tcaccaccac cttctacaag aacctgttcg ccaagcaccc ggaggtccgc
120
ccccgttcg acctgggccg gcaggagtcc ctcgagcagc cgaaggccct ggcgatgacc
180
gtgctcgccg cggcccagaa catcgagaac ctgccggcca tcctccccgc ggtcaagaag
240
atcgccgtga agcacggcca ggccggcgctc gcggccgcgc actcccccat cgtgggccag
300
gagctgctcg gcgccatcaa ggaggtcctg ggcgacgccg cgaccgacga catcctcgac
360
gcctggggca aggcgtacgg cgtgatcgcg gacgtgttca tccaggtgga ggcggacctc
420
tacgcgcagg cgggtggagta a
441

<210> 65
<211> 146
<212> 氨基酸
<213> 大肠杆菌(Escherichia coli)
<400> 65
MLDQQTINIIKATVPVLKEHGVITITTFYKNLFAKHPEVRPLFDLGRQESLEQPKALAMT
60
VLAAAQNIENLPAILPAVKKIAVKHGQAGVAAAHSPIVGQELLGAIKEVLGDAATDDILD
120
AWGKAYGVIADVFIQVEADLYAQAVE
146